



ATTORNEY DOCKET NO.: CIS01-02(3665)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jean-Philippe Champagne
Serial No.: 09/834,796
For: METHODS AND APPARATUS FOR TRANSMITTING INFORMATION IN
A NETWORK
Filing Date: April 13, 2001
Examiner: Nano, Sargon N.
Art Unit: 2157
Conf. No.: 8371

Certificate of Mailing Under 37 C.F.R. §1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: **MAIL STOP PETITION**, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

Date: May 13, 2005

By: Farah Z. Frasco
(Typed or printed name of person mailing
Document, whose signature appears below)

Signature: Farah Z. Frasco

MAIL STOP PETITION
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION TO WITHDRAW NOTICE OF ABANDONMENT

Under 37 C.F.R. §§ 1.8(b) and 1.181, Applicant hereby petitions for withdrawal of a holding of abandonment in the above-identified Application. In particular, Applicant respectfully requests reconsideration of the holding of abandonment because there is no abandonment in fact.

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- 2 -

Applicant recently received a Notice of Abandonment mailed on March 22, 2005, a copy of which is enclosed. The Notice contends that the Patent Office has not received a reply to an Office Action mailed on August 13, 2004. This contention is incorrect. Applicant submitted a reply to the Office Action on November 15, 2004 in a timely manner, a copy of which is also enclosed. Moreover, this reply is a complete response and does not raise any new issues that would require further searching and/or consideration from the Patent Office.

Applicant submits that this Petition is being promptly submitted as required by 37 C.F.R. § 1.8(b)(1). The following documents are submitted under 37 C.F.R. § 1.8(b)(2) as proof that a reply was timely filed on November 15, 2004:

1. A copy of the reply and associated papers, including an executed certificate of mailing signed by Tammy L. Rosado on November 15, 2004.
2. A copy of two returned postcards dated November 15, 2004 that were included with the reply.
3. A copy of the two returned postcards that were stamped as having been received by the PTO Mailroom on November 18, 2004.

Also enclosed are original signed declarations under 37 C.F.R. § 1.8(b)(3) by those involved in submitting the reply. In particular, enclosed are declarations from Tammy L. Rosado and Jeffrey J. Duquette, Esq. attesting on the basis of personal knowledge that the reply was submitted on November 15, 2004.

In view of the above, Applicant submits that the reply was timely filed and that there is no abandonment in fact. Accordingly, Applicant requests that the holding of abandonment be withdrawn.

In view of the above, Applicant respectfully submits that there is no fee required for this petition. If there is a fee required by this petition, please charge that fee to Deposit Account No. 50-0901. Furthermore, if there is a fee required by this petition

and if that fee is charged to Deposit Account No. 50-0901, Applicant respectfully

U.S. Application No.: 09/834,796

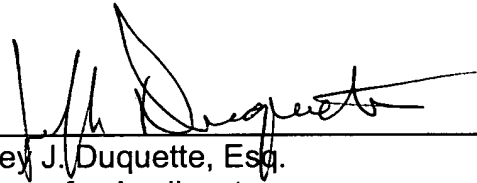
Attorney Docket No.: CIS01-02(3665)

- 3 -

requests a refund of that fee in view of the above-provided information supporting withdrawal of the holding of abandonment.

If the enclosed papers or fees are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned collect at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jeffrey J. Duquette', is written over a horizontal line.

Jeffrey J. Duquette, Esq.
Attorney for Applicant
USPTO Registration No.: 45,487
CHAPIN & HUANG, L.L.C.
Westborough Office Park
1700 West Park Drive
Westborough, Massachusetts 01581
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Dated: May 13, 2005



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Date: November 15, 2004

By: Tammy L. Rosado
(Typed or printed name of person mailing
Document, whose signature appears below)

Signature: Tammy L. Rosado

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER

EXHIBIT COPY

Sir:

Enclosed is/are:

- [x] Transmittal Letter (this form, 2 pages, in duplicate), Total Pages: 4;
- [x] Amendment, Total Pages: 25;
- [x] Return Receipt Pre-paid Postcard (in duplicate), Total postcards: 2;
- [x] Check in the amount of: \$72.00, with fee amounts calculated as follows:

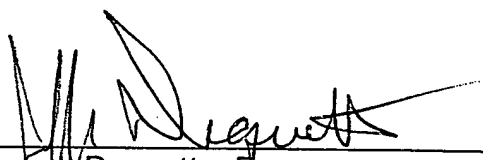
- 2 -

	Claims Remaining After Amendment	Highest No. Previously Paid For	Present Extra	Rate	Additional Fee
Total Claims	35	- 31	= 4	X \$18.00	= \$72.00
Independent Claims	5	- 6	= 0	X \$88.00	= \$0.00
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT					= \$72.00

Applicant hereby petitions for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned collect at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,



Jeffrey V. Duquette, Esq.
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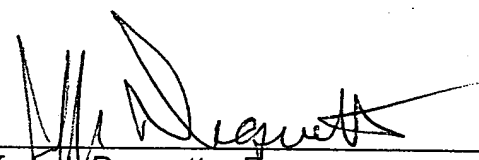
- 2 -

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If the enclosed papers or fees are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned collect at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,



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Signature: Tammy L. Rosado

MAIL STOP AMENDMENT
Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

FILE COPY

AMENDMENT

Sir:

In response to the Office Action mailed August 13, 2004, please amend the above-identified Application as follows:

IN THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the Application:

LISTING OF CLAIMS:

1. (Original) In a network device in a network, a method of establishing a communications path through the network device for a stream of data, the method comprising the steps of:
 - receiving a first data distribution message from an upstream device in the network;
 - acknowledging receipt of the first data distribution message to the upstream device in the network;
 - forwarding a second data distribution message to a downstream device in the network; and
 - determining if the network device receives an acknowledgment of receipt of the second data distribution message, and if the network device receives an acknowledgment, establishing at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment.
2. (Original) The method of claim 1 wherein the step of receiving a first data distribution message from an upstream device in the network comprises the steps of:
 - obtaining, from the first data distribution message, a stream identifier that identifies the stream of data for which the communications path is to be established through the network device;
 - storing the stream identifier in a path table, the path table used by a data distribution process in the network device to identify paths for the stream of data through the network device; and

configuring an upstream device identifier in the second data distribution message with an identity of the network device that received the first data distribution message.

3. (Original) The method of claim 2 wherein the step of establishing at least one path through the network device between the upstream device and the downstream device comprises the steps of:

obtaining a downstream device identifier from within the acknowledgment, the downstream device identifier identifying a downstream network device that supports the data distribution protocol and that originated the acknowledgment;

obtaining a stream identifier from within the acknowledgment, the stream identifier identifying a stream of data to which the acknowledgment is associated; and

creating a path entry in the path table for a stream of data identified by the stream identifier in the acknowledgment received by the network device by associating the downstream device identifier to the stream identifier in the path table to create a path for the stream of data to each downstream device associated with the stream identifier.

4. (Original) The method of claim 3 wherein the stream identifier includes at least one of:

- i) a data indicator for the stream of data; and
- ii) an identification of the server computer system providing the stream of data.

5. (Original) The method of claim 3 wherein the step of creating a path entry in the path table for the stream of data identified by the stream identifier further comprises the step of:

incrementing a host device counter associated with the path entry in the path table for the stream of data in order to track how many host devices use a

path defined by the path entry in the network device to receive the stream of data.

6. (Currently Amended) The method of claim 1 wherein if, in the step determining if the network device receives an acknowledgment ~~on the communications interface~~ of receipt of the second data distribution message, the network device determines that it did not receive the acknowledgment, the method performs the operations of:

- establishing at least one host path through the network device for the stream of data, the at least one host path indicating that a host device coupled to the network device is to receive the stream of data; and

- receiving a payload distribution message containing the stream of data, the payload distribution message being associated with a stream identifier in the path table;

- removing payload data from the payload distribution message; and
- forwarding the payload data to the host device as the stream of data.

7. (Original) The method of claim 1 further including the steps of:

- receiving a payload distribution message from an upstream device in the network, the payload distribution message containing a stream identifier associated with the at least one path through the network device;

- consulting a path table containing the at least one path through the network device to determine each path on which to forward the payload distribution message; and

- forwarding the payload distribution message on each path determined from the step of consulting the path table such that downstream network devices can receive the payload distribution message.

8. (Original) The method of claim 1 wherein:

the acknowledgment includes a downstream device identifier identifying the network device as a downstream device with respect to the upstream device that originated the first data distribution message and to which the acknowledgement is forwarded;

the acknowledgment includes a stream identifier identifying a stream of data to which the acknowledgment is associated; and

wherein the acknowledgement is received by the upstream device that originated the second data distribution message and is treated as a downstream acknowledgement forwarded from the downstream network device.

9. (Original) The method of claim 1 wherein the downstream device is a network device and wherein the step of forwarding forwards the entire first data distribution message to the downstream device such that the downstream device can establish a communications path through the network for the stream of data.

10. (Original) The method of claim 1 wherein:

the downstream device is a host device that requested receipt of the stream of data; and

wherein the step of forwarding comprises the step of:

forwarding a payload portion of the stream of data in the first data distribution message to the host device such that the host device can receive the stream of data over the communications path through the network.

11. (Original) The method of claim 1 wherein:

the first data distribution message contains a destination network address identifying a host device which provided a request to a server device for the stream of data served from the server device; and

wherein the step of forwarding forwards the second data distribution message to a downstream device using a routing protocol that selects a route

that forwards the second data distribution message towards a host device which provided the request to the server device for the stream of data.

12. (Original) The method of claim 11 wherein if the routing protocol determines that there are multiple routes that can be used to forward the second data distribution message towards a host device which provided the request to the server device for the stream of data, the routing protocol selects a route to a downstream network device that contains an established path for the stream of data identified by a stream identifier within the first data distribution message.

13. (Original) The method of claim 1 further including the steps of:

receiving a portion of data associated with the stream of data, the portion of data originating from a server device that serves the stream of data and including a data distribution header containing a stream identifier for this portion of data; and

forwarding the portion of data to a downstream device associated with each of the at least one path for the stream of data as identified in a path table associated with the stream identifier, such that the portion of data is distributed on each of the at least one path in the path table towards host devices that requested to receive the stream of data.

14. (Original) A method of propagating payload data through a network device in a network, the method comprising the steps of:

receiving a payload distribution message containing a data distribution header which includes a stream identifier identifying a stream of data;

based on the stream identifier, consulting a path table to determine each path on which to forward at least a portion of the payload distribution message to a downstream device in the network; and

forwarding, for each path in the path table, at least a portion of the payload distribution message to a downstream device in the network such that the

downstream device receives payload data within the payload distribution message.

15. (Original) The method of claim 14 wherein at least one downstream device in the network is a host device and wherein the step of forwarding, for each path in the path table, at least a portion of the payload distribution message to a downstream device in the network includes the steps of:

extracting, for each host path in the path table, payload data from the payload distribution message; and

forwarding the payload data to the host device such that the host device receives the payload data received by the network device within the payload distribution message.

16. (Original) The method of claim 15 wherein the payload data is stream data and wherein the step of extracting, for each host path in the path table, further includes the step of:

extracting header information for the stream data from the payload distribution message; and

creating a packet for receipt by the host device, the packet including the header information for the stream data and including the stream data extracted from the payload distribution message; and

wherein the step of forwarding the payload data to the host device comprises forwarding the packet for receipt by the host device such that the host device receives a packet of stream data.

17. (Original) A network device comprising:

an communications interface;

a memory system;

a processor; and

an interconnection mechanism coupling the communications interface, the memory system, and the processor;

wherein the memory system is configured with a data distribution application, that when performed on the processor, provides a data distribution process that establishes a communications path through the network device in a network for a stream of data by performing the operations of:

receiving, via the communications interface, a first data distribution message from an upstream device in the network;

acknowledging receipt of the first data distribution message to the upstream device in the network;

forwarding, via the communications interface, a second data distribution message to a downstream device in the network; and

determining if the network device receives an acknowledgment of receipt of the second data distribution message, and if the network device receives an acknowledgment, establishing, in the memory system, at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment.

18. (Original) The network device of claim 17 wherein when the data distribution process performs the operation of receiving a first data distribution message from an upstream device in the network, the data distribution process performs the operations of:

obtaining, from the first data distribution message in the memory system, a stream identifier that identifies the stream of data for which the communications path is to be established through the network device;

storing the stream identifier in a path table in the memory system, the path table used by a data distribution process in the network device to identify paths for the stream of data through the network device; and

configuring an upstream device identifier in the second data distribution message in the memory system with an identity of the network device that received the first data distribution message.

19. (Original) The network device of claim 18 wherein when the data distribution process performs the operation of establishing at least one path through the network device between the upstream device and the downstream device, the data distribution process performs the operations of:

obtaining a downstream device identifier from within the acknowledgment in the memory system, the downstream device identifier identifying a downstream network device that supports the data distribution protocol and that originated the acknowledgment;

obtaining a stream identifier from within the acknowledgment in the memory system, the stream identifier identifying a stream of data to which the acknowledgment is associated; and

creating a path entry in the path table for a stream of data identified by the stream identifier in the acknowledgment received by the network device by associating the downstream device identifier to the stream identifier in the path table to create a path for the stream of data to each downstream device associated with the stream identifier.

20. (Original) The network device of claim 19 wherein the stream identifier includes at least one of:

- i) a data indicator for the stream of data; and
- ii) an identification of the server computer system providing the stream of data.

21. (Original) The network device of claim 19 wherein when the data distribution process performs the operation of creating a path entry in the path table for the

stream of data identified by the stream identifier, the data distribution process performs the operation of:

incrementing a host device counter associated with the path entry in the path table for the stream of data in order to track how many host devices use a path defined by the path entry in the network device to receive the stream of data.

22. (Original) The network device of claim 17 wherein when the data distribution process performs the operation of determining if the network device receives an acknowledgment on the communications interface of receipt of the second data distribution message, if the network device does not receive the acknowledgment, the data distribution process performs the operations of:

establishing, in a path table in the memory system, at least one host path through the network device for the stream of data, the at least one host path indicating that a host device coupled to the network device is to receive the stream of data; and

receiving, via the communications interface, a payload distribution message containing the stream of data, the payload distribution message being associated with a stream identifier in the path table;

removing payload data from the payload distribution message; and

forwarding the payload data to the host device as the stream of data.

23. (Original) The network device of claim 17 wherein the data distribution process further performs the operation of:

receiving, via the communications interface, a payload distribution message from an upstream device in the network, the payload distribution message containing a stream identifier associated with the at least one path through the network device;

consulting a path table in the memory system containing the at least one path through the network device to determine each path on which to forward the payload distribution message; and

forwarding the payload distribution message on each path determined from the step of consulting the path table such that downstream network devices can receive the payload distribution message.

~~23~~ 32. (Currently Amended) The network device of claim 17 wherein:

the acknowledgment includes a downstream device identifier identifying the network device as a downstream device with respect to the upstream device that originated the first data distribution message and to which the acknowledgement is forwarded;

the acknowledgment includes a stream identifier identifying a stream of data to which the acknowledgment is associated; and

wherein the acknowledgement is received by the upstream device that originated the data distribution message and is treated as an acknowledgement forwarded from the network device.

~~(downstream device = network device)~~

24. (Original) The network device of claim 17 wherein the downstream device is a network device and wherein when the data distribution process performs the operation of forwarding, the data distribution process forwards the entire first data distribution message to the downstream device such that the downstream device can establish a communications path through the network for the stream of data.

25. (Original) The network device of claim 17 wherein:

the downstream device is a host device that requested receipt of the stream of data; and

wherein when the data distribution process performs the operation of forwarding, the data distribution process performs the operation of:

forwarding a payload portion of the stream of data in the first data distribution message to the host device such that the host device can receive the stream of data over the communications path through the network.

26. (Original) The network device of claim 17 wherein:

the first data distribution message contains a destination network address identifying a host device which provided a request to a server device for the stream of data served from the server device; and

wherein when the data distribution process performs the operation of forwarding, the network device forwards the at least a portion of the second data distribution message to a downstream device using a routing protocol that selects a route that forwards the second data distribution message towards a host device which provided the request to the server device for the stream of data.

27. (Original) The network device of claim 26 wherein if network device operating the routing protocol determines that there are multiple routes that can be used to forward the second data distribution message towards a host device which provided the request to the server device for the stream of data, the network device operates the routing protocol to select a route to a downstream network device that contains an established path for the stream of data identified by a stream identifier within the first data distribution message.

28. (Original) The network device of claim 17 wherein the data distribution process further performs the operations:

receiving a portion of data associated with the stream of data, the portion of data originating from a server device that serves the stream of data and including a data distribution header containing a stream identifier for this portion of data; and

forwarding the portion of data to a downstream device associated with each of the at least one path for the stream of data as identified in a path table associated with the stream identifier, such that the portion of data is distributed on each of the at least one path in the path table towards host devices that requested to receive the stream of data.

29. (Original) A computer program product having a computer-readable medium including data distribution application computer program logic encoded thereon for establishing a communications path through the network device in a network for a stream of data, such that the computer program logic, when performed on at least one processor within a communications device, causes the at least one processor to perform the operations of:

- receiving a first data distribution message from an upstream device in the network;

- acknowledging receipt of the first data distribution message to the upstream device in the network;

- forwarding a second data distribution message to a downstream device in the network; and

- determining if the network device receives an acknowledgment of receipt of the second data distribution message, and if the network device receives an acknowledgment, establishing at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment.

30. (Original) A network device comprising:

- an communications interface;

- a memory system;

- a processor; and

- an interconnection mechanism coupling the communications interface, the memory system, and the processor;

wherein the memory system is configured with a data distribution application, that when performed on the processor, provides a means for establishing a communications path through the network device in a network for a stream of data, the means including:

means for receiving a first data distribution message from an upstream device in the network;

means for acknowledging receipt of the first data distribution message to the upstream device in the network;

means for forwarding a second data distribution message to a downstream device in the network; and

means for determining if the network device receives an acknowledgment of receipt of the second data distribution message, and if the network device receives an acknowledgment, establishing at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment.

31. Cancelled

33. (New) The method of claim 1 wherein establishing at least one path through the network device for a stream of data identified by the first data distribution message comprises establishing at least one path through the network device for a stream of data identified by the first data distribution message, the stream selected from the group consisting of a real time audio stream of data, a real time video stream of data, a real time multimedia stream of data, a non-real time stream of audio data, a non-real time stream of video data, or a non-real time stream of multimedia data.

34. (New) The network device of claim 17 wherein, when establishing, in the memory system, at least one path through the network device for the stream of

data comprises establishing at least one path through the network device for a stream of data identified by the first data distribution message, the stream selected from the group consisting of a real time audio stream of data, a real time video stream of data, a real time multimedia stream of data, a non-real time stream of audio data, a non-real time stream of video data, or a non-real time stream of multimedia data.

35. (New) The method of claim 1 wherein the step of determining comprises determining if the network device receives an acknowledgment of receipt of the second data distribution message, and if the network device receives an acknowledgment, establishing at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment, the stream of data transmitted between the upstream device and a downstream device via a multicast protocol and the network device not multicast enabled.

36. (New) The network device of claim 17 wherein the memory system is configured, when determining, to determine if the network device receives an acknowledgment of receipt of the second data distribution message, and if the network device receives an acknowledgment, establishing, in the memory system, at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment, the stream of data transmitted between the upstream device and a downstream device via a multicast protocol and the network device not multicast enabled.

REMARKS

In response to the Office Action mailed August 18, 2004, Applicants respectfully request reconsideration. To further the prosecution of this Application, Applicants submit the following remarks, have cancelled claims, and have added new claims.

Claims 1-31 were pending in this Application. By this Amendment, claim 6 has been amended, claim 31 has been cancelled, and claims 32-36 have been added. Accordingly, claims 1-30 and 32-36 are now pending in this Application. Claims 1, 14, 17, 29, and 30 are independent claims and the remaining claims are dependent claims. The Applicant believes that the claims as presented are in condition for allowance. A notice to this effect is respectfully requested.

Claims 1-31 have been rejected. Claim 23 has been objected to as reciting the phrase "(downstream device = network device)". Additionally, claim 23 is objected to because the claim numbering for claim 23 is incorrect. The Office Action indicates that claim number 23 is repeated twice and the content of the first claim 23 is different than the content of the second claim 23.

Claim 6 has been rejected under 35 U.S.C. §112 as having insufficient antecedent basis for the term "acknowledgement". Claims 1-4, 6-20, and 22-31 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,754,706 by Swildens et al. (hereinafter Swildens). Claims 5 and 21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Swildens in view of U.S. Patent No. 6,708,215 by Hingorani et al. (hereinafter Hingorani). The Applicant respectfully disagrees with these contentions and asserts that the present claimed invention is not anticipated by any disclosure in the Swildens and Hingorani references, either alone or in combination.

Claim Amendments

Claim 6 has been amended to clarify the nature of the invention. The Office Action states that the term "acknowledgement" in claim 6 has insufficient antecedent basis. However, upon further review of claim 6, in light of claim 1,

the Applicant has amended the claim to remove the language "on the communications interface". Claim 6 now recites "in the step determining if the network device receives an acknowledgment of receipt of the second data distribution message". Claim 6 clearly recites the "acknowledgement" as being "an acknowledgment of receipt of the second data distribution message".

Referring to claim 1, the term "acknowledgement" does have proper antecedent basis to the second data distribution message. Reconsideration of the rejection is respectfully requested.

Claim 23 (e.g., the second claim 23 as originally presented) has been amended to remove the phrase "(downstream device = network device)" as advised by the Examiner. The amendment does not add new matter to the application. Additionally, the Office Action indicates that claim number 23 is repeated two times and the content of the first claim 23 is different than the content of the second claim 23. As such, the second claim 23, as originally presented, has been renumbered as claim 32. The Office Action has indicated that the Examiner will treat the claim as a new claim.

Newly Added Claims

Claims 32-36 have been added and are believed to be in allowable condition.

Claim 32 was originally presented as improperly numbered claim 23 (e.g., the second claim 23 as originally presented). Addition of this claim does not add new matter to the application.

Claims 33 and 34 provide clarification and define the "stream of data" recited in independent claims 1 and 17, respectively. Support for claims 33 and 34 is provided within the specification on page 21, lines 16-17, for example. No new matter has been added to the application by addition of the claims.

Claims 35 and 36 have been amended to include "the stream of data transmitted between the upstream device and a downstream device via a multicast protocol and the network device not multicast enabled". Support for

claims 35 and 36 is provided within the specification on page 23, lines 9-17, for example. No new matter has been added to the application by addition of the claims.

Swildens and Hingorani References

Swildens relates to routing and load balancing of traffic in a Domain Name System in a computer environment.¹ Regarding Swildens' Fig. 2, Swildens describes the basic process an existing load balancing DNS server uses to respond to a client request. In Swildens:

"[a] User 101 makes a request to resolve a name www.name.com 102 to the User's Client DNS Server 103. The Client DNS Server 104 sends the request 104 to the DNS Server 105 because the DNS Server 105 is authoritative for the domain www.name.com within the Network Servers 106.

The DNS server 105 determines the load and availability of the content servers 107, 108. The DNS server 105 consults a table containing persistent entries, using the Client DNS Server (which identifies a group of users) and hostname as keys, to determine if a persistent response should be returned.

If not, the DNS server 105 determines the availability and latency from its content servers 107, 108 to the Client DNS server 103. The DNS server 105 returns a response to the Client DNS Server 103 which returns a response to the User 101."²

Additionally, Swildens includes latency probes that send DNS servers latency metric information.³ In Swildens, "[t]he latency probe will perform one of any number of methods to determine the latency (network round trip time) from its location to a client DNS location. One probe that could be performed would be sending a 'ping' packet to the client DNS."⁴

¹ Swildens, col. 1, l. 15-17.

² Swildens, col. 4, l. 3-20.

³ Swildens, col. 6, l. 22-25.

⁴ Swildens, col. 6, l. 29-33.

Hingorani relates to customer interaction systems and provides a system that monitors the access of information by an individual or system.⁵

Rejections under §102(b)

Independent claims 1, 14, 17, 29, 30, and 31 are rejected under 35 U.S.C. §102(b) as being anticipated by Swildens.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."⁶ "The identical invention must be shown in as complete detail as is contained in the ... claim."⁷

Independent claim 1, relates to a method of establishing a communications path through a network device in a network for a stream of data. The method includes the steps of receiving a first data distribution message from an upstream device in the network, acknowledging receipt of the first data distribution message to the upstream device in the network, and forwarding a second data distribution message to a downstream device in the network. The method also includes the step of determining if the network device receives an acknowledgment of receipt of the second data distribution message. If the network device receives an acknowledgment the network device establishes at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment.

Independent claim 17 relates to a network device having a communications interface, a memory system, a processor, and an interconnection mechanism coupling the communications interface, the memory system, and the processor. The memory system is configured with a data distribution application, that when performed on the processor, provides a data

⁵ Hingorani, col. 1, l. 14-16.

⁶ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

⁷ *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

distribution process that establishes a communications path through the network device in a network for a stream of data by performing the method steps outlined above.

Independent claim 29 relates to a computer program product having a computer-readable medium including data distribution application computer program logic encoded thereon for establishing a communications path through the network device in a network for a stream of data. The computer program logic, when performed on a processor within a communications device, causes the processor to perform the method steps outlined above. Independent claim 30 relates to a network device having a communications interface, a memory system, a processor, and an interconnection mechanism coupling the communications interface, the memory system, and the processor. The memory system is configured with a data distribution application, that when performed on the processor, provides a means for establishing a communications path through the network device in a network for a stream of data.

Swildens, however, does not anticipate independent claims 1, 17, 29, and 30 because Swildens does not teach or suggest each and every element of independent claims 1, 17, 29, and 30.

Each of the independent claims 1, 17, 29, and 30 include description of a network device "receiving a first data distribution message from an upstream device in the network" and "forwarding a second data distribution message to a downstream device in the network". The Office Action states "Swildens teaches a first data distribution method from a device by receiving a request by the client DNS server upon a request from [a] user". As such, the Office Action relates the client DNS server 103 of Swildens with the network device recited by the Applicant. The Office Action also states "Swildens teaches the second data distribution to a device in [the] network by sending the request from the client DNS server to [the] DNS server, therefore forwarding the second message to the DNS server in the network". As such, the Office Action relates the DNS server 105 of Swildens with the downstream device recited by the Applicant.

Additionally, each of the independent claims 1, 17, 29, and 30 include description of the network device "determining if the network device receives an acknowledgment of receipt of the second data distribution message, and if the network device receives an acknowledgment, establishing at least one path through the network device for a stream of data identified by the first data distribution message between the upstream device and a downstream device identified in the acknowledgment". The Office Action states that "Swildens teaches the acknowledgment of receipt of second data and establishing a path by sending a ping packet from [the] DNS server to [the] client DNS server and use the router closest to [the] client DNS". The ping packet in Swildens, however, is a latency probe that sends a DNS server latency metric information. In Swildens, the latency probe (e.g., ping packet) determines the latency (network round trip time) from its location to a client DNS location. While the ping packet provides latency metric information, Swildens does not teach or suggest the ping packet as providing the client DNS (e.g., Applicant's network device) with "an acknowledgment of receipt of the second data distribution message" as claimed by the Applicant.

Because Swildens does not teach or suggest every element of the Applicant's amended independent claims 1, 17, 29, and 30, the claims are patentable over Swildens and should be allowed to issue. Accordingly, the rejection of these claims should be withdrawn. Claims 2-13, which depend on claim 1 and claims 18-28, which depend upon claim 17 should also be allowed to issue as depending upon allowable independent claims (i.e., for at least the reasons presented). Reconsideration of the rejection is respectfully requested.

Independent claim 14 relates to a method of propagating payload data through a network device in a network. The method includes receiving a payload distribution message containing a data distribution header which includes a stream identifier identifying a stream of data. Based on the stream identifier, the method includes consulting a path table to determine each path on which to forward at least a portion of the payload distribution message to a downstream

device in the network. The method also includes forwarding, for each path in the path table, at least a portion of the payload distribution message to a downstream device in the network such that the downstream device receives payload data within the payload distribution message.

Swildens, however, does not anticipate independent claim 14 because Swildens does not teach or suggest each and every element of independent claim 14.

The Office Action states that, with respect to Applicant's claim element "receiving a payload distribution message containing a data distribution header which includes a stream identifier identifying a stream of data", Swildens teaches "receiving a request and directing the request to the proper DNS after consulting a path table". The Office Action further states that with respect to Applicant's claim element "based on the stream identifier, consulting a path table to determine each path on which to forward at least a portion of the payload distribution message to a downstream device in the network", Swildens "consults a table to see which of the addresses to use for the payload [data] to forward, hence determine which path to take".

The Office Action is incorrect in the describing the processing of the request in Swildens after the DNS server receives the request. Swildens, in column 2, lines 45-47 describes:

"A preferred embodiment of the invention receives requests from client DNS servers or other DNS servers. The invention checks to see if the client DNS server is part of the DNS group that the DNS server is authoritative. Each DNS server is associated with a subset of the DNS groups in the network.

If the DNS server is not authoritative for the client DNS server's group, then the request is forwarded to the proper DNS server."

As such, when the DNS server is not authoritative, the DNS server forwards the request to the proper DNS server **prior to consulting the path table**. Swildens **does not** indicate that the DNS server consults a path table to forward the request to another DNS server (e.g., a downstream device).

Swildens also indicates, in column 2, lines 47-51:

“Otherwise, the invention checks a persistence table to see if a persistent response is required for the request. If a persistent response is required, the appropriate IP address entry in the table is returned to the requester.

If a persistent response is not required, the invention determines the load, availability, and latency of the content servers from information stored in a latency table to determine the proper content server to reference. The proper content servers address is returned to the requestor.”

After the DNS server checks the persistence table, the DNS server provides a response **to the requestor** (e.g., the client DNS or an upstream device), **not** to the downstream device.

Therefore, Swildens describes consulting a persistence table prior to returning a response to an upstream device. Swildens does not teach or suggest element “based on the stream identifier, consulting a path table to determine each path on which to forward at least a portion of the payload distribution message to a downstream device in the network” as claimed by the Applicant.

Because Swildens does not teach or suggest every element of the Applicant’s amended independent claim 14, the claims is patentable over Swildens and should be allowed to issue. Accordingly, the rejection of the claim should be withdrawn. Claims 15-16, which depend on claim 14 should also be allowed to issue as depending upon allowable independent claims (i.e., for at least the reasons presented). Reconsideration of the rejection is respectfully requested.

Rejections under §103(a)

Dependent claims 5 and 21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Swildens in view of Hingorani.

In order to establish a *prima facie* case of obviousness, the Office Action must meet three criteria.

"First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations."⁸

As described above with respect to the Rejections under §102(b), Swildens does not teach or suggest every element of the Applicant's independent claims 1 and 17 and the claims are patentable over Swildens. As such, the combination of Swildens and Hingorani does not anticipate claim 5, which depends on allowable claim 1, and claim 21, which depends upon allowable claim 17. Reconsideration of the rejection is respectfully requested.

⁸

In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991):

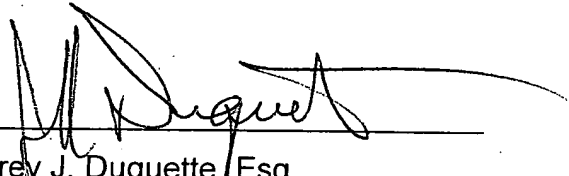
Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this effect is respectfully requested. If the Examiner believes, after this Response, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the Applicants' Representative at the number below.

Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,



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Attorney Docket No.: CIS01-02(3665)

Dated: November 15, 2004

Initials: BWC/JJD

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Title: METHODS AND APPARATUS FOR TRANSMITTING INFORMATION IN A NETWORK
U.S.S.N. 10/834,796

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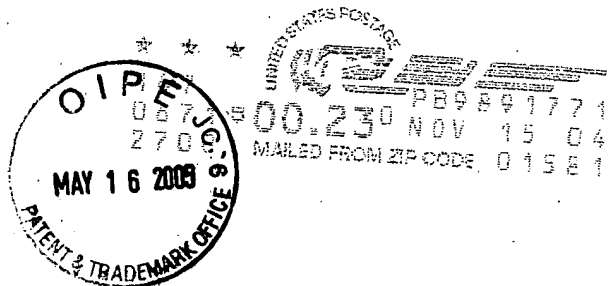
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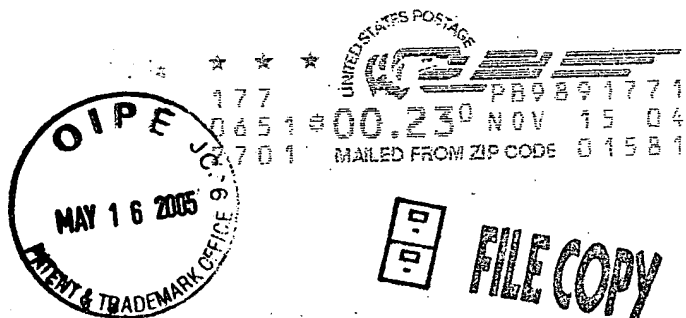
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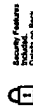
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
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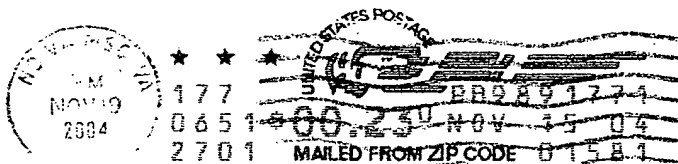
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